

Crystal Cedar: Proposed Action

Introduction

The Crystal Cedar project was developed to address multiple resource objectives in an area of the Hungry Horse-Glacier View Ranger District of the Flathead National Forest. In November 2017, the district sent out a request for information to interested parties and landowners within a half-mile of the project area. The district received input from approximately 70 members of the public. The team used public input and information gathered during field review to develop recommendations to move the area toward a desired condition for vegetation and recreation. These recommendations were fine-tuned into management actions to be taken into a formal planning process beginning with this proposed action.

Project Area

This project area is approximately 27,249 acres in size and is bounded to the south by the community of Columbia Falls and to the west by the Flathead River (refer to figure 1. vicinity map). This area includes Crystal Creek, Cedar Flats, Spoon Lake, Blankenship Road, and Teakettle Mountain. Ownership within the project area is 33 percent private (8,915 acres), 2 percent State (479 acres), and 65 percent National Forest System land (17,795 acres). All proposed activities would occur on National Forest System land (NFS). Approximately 92 percent (24,987 acres) of the project area is located within the wildland-urban interface (WUI) and has been identified as a high priority for treatment. This is due to the concentration of private dwellings adjacent to NFS lands and the potential for fires starting in or spreading from these NFS lands.

The project area includes the Teakettle lynx analysis unit and the Cedar Teakettle grizzly bear management subunit. It also includes areas designated as part of the wild and scenic river corridor of the Flathead River.

Purposes

The Crystal Cedar Project seeks to address the following purposes and needs in the project area:

- Provide sustainable trail-based recreation opportunities close to local communities that are compatible with other resources.
- Reduce tree densities and fuel loadings within the wildland-urban interface to result in less intense fire behavior near communities and facilitate safe wildland fire operations.
- Improve the diversity and resilience of forest vegetative communities and associated wildlife habitat.
- Provide a mix of forest products to contribute to economic sustainability, providing jobs and income to local economies.

Provide sustainable trail-based recreation opportunities close to local communities that are compatible with other resources.

The Crystal Cedar project area is popular with members of the public for walking, biking, off-road vehicle riding, driving, cross-country skiing, forest products gathering, and other activities due to its close proximity to the community of Columbia Falls. The Forest Service currently manages approximately 7 miles of motorized trails in the project area. There is interest from the public to see more trails in areas

close to communities that are compatible with other resource needs. Community members in Columbia Falls asked the Forest Service to consider a nonmotorized trail system in the project area that could be constructed and maintained in partnership with community organizations.

Reduce tree densities and fuel loadings within the wildland-urban interface to result in less intense fire behavior near communities and facilitate safe wildland fire operations.

The Half Moon Fire of 1929 burned the majority of the project area. Fire exclusion in the project area since the Half Moon Fire has resulted in fuels conditions that pose substantial risks to residences and private property within the WUI. Past projects such as Cedar Spoon (2004) and Blankenship Fuels (2006) have reduced tree density and fuel loadings in portions of the project area, but local fire departments and the Forest Service recognize there is a need for more fuels reduction work to be done within the project area, given its close proximity to the community of Columbia Falls.

Improve the diversity and resilience of forest vegetative communities and associated wildlife habitat.

The Crystal Cedar project area consists of 57 percent warm-moist habitat type and 35 percent cool-moist habitat type. The dominant cover types in the project area are western larch, Douglas-fir, and hardwoods such as birch and aspen. This project area also has areas of western red cedar, wetlands, and fens scattered throughout, which provide valuable habitat for native plants and wildlife. Vegetation treatments will promote tree growth to increase the growth of large trees and improve the species diversity in areas dominated by lodgepole pine following the Half Moon Fire of 1929. Vegetation management would be designed to maintain wildlife habitat connectivity and winter range in project forest stands. Prescribed burning and slashing in vegetation treatment areas will stimulate the growth of browse species for big game.

Provide a mix of forest products to contribute to economic sustainability, providing jobs and income to local economies.

The Crystal Cedar project area is used for gathering of non-commercial forest products by local residents and is in close proximity to multiple mills, wood manufacturing facilities, and specialty wood product business. Vegetation management activities may produce commercial and non-commercial forest products that contribute to the local economy.

Vicinity Map

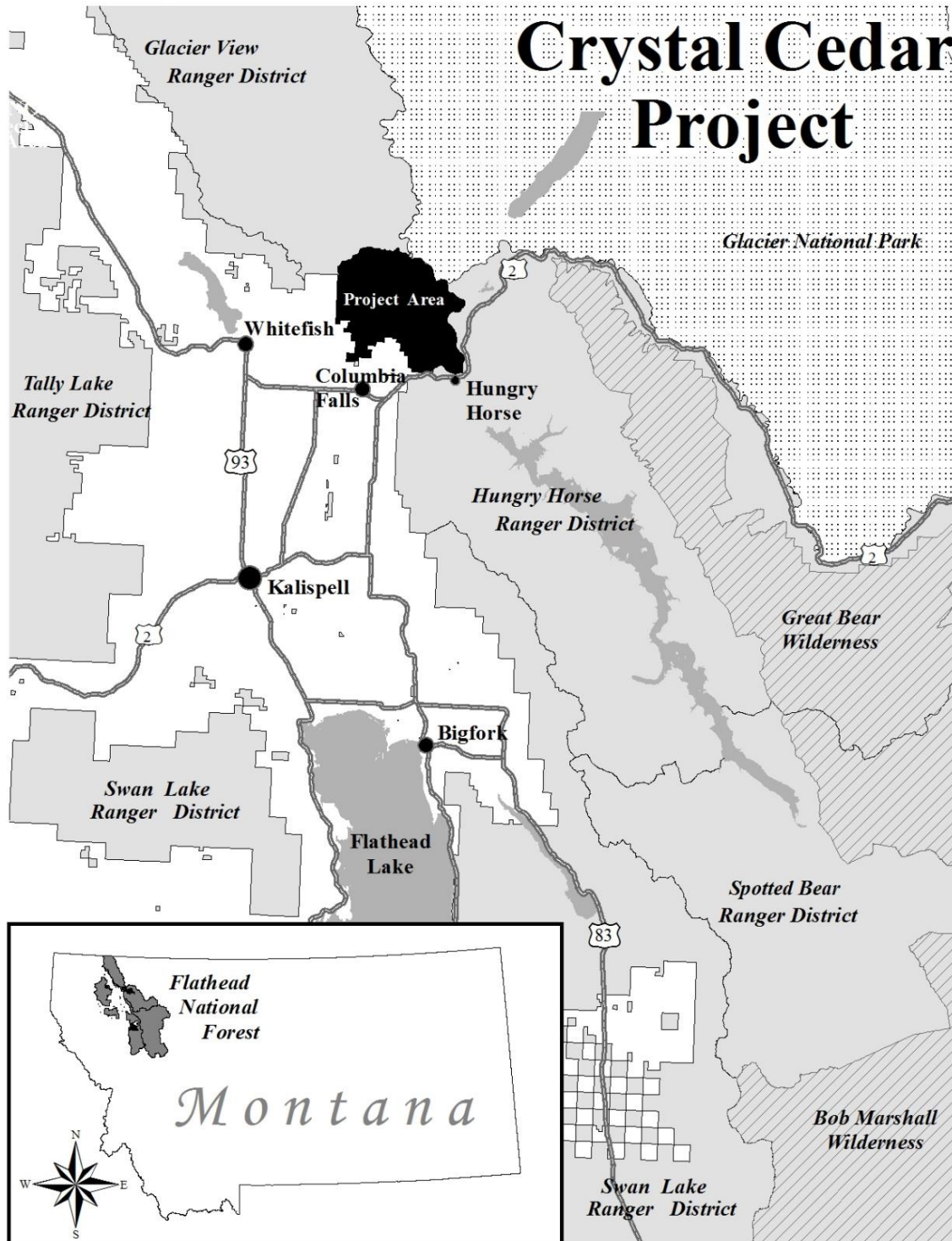


Figure 1. Vicinity map

Proposed Action

The proposed action is a set of management actions to meet the purpose and need for action as described above. Table 1 provides a summary of the components of the proposed action. Following the table is more information related to these components.

Table 1. Summary of proposed action components

Proposed trail construction	Miles
Nonmotorized trail	24.3
Motorized trail	0.2
Proposed vegetation treatments	Acres
Commercial thin	2,024
Seed tree	513
Shelterwood	32
Clearcut	13
Overstory Removal	46
Total proposed commercial harvest	2,628
Sapling thin	535
Understory removal	280
Live birch cutting along open roads ¹	281
Prescribed burning (ecosystem burns)	157
Total proposed non-commercial harvest	1,253
Proposed road management	Miles
Temporary roads	6.3
NFS system road construction	0.9
NFS system road reroute	0.2
NFS system road aquatic organism passage structures	1 structure

Proposed Trails

The Crystal Cedar Project proposes to add a trail network in the project area to the National Forest System for management. The Cedar Flats Working Group, a subcommittee of Gateway to Glacier, provided input to the Forest Service regarding the development of a nonmotorized trail network north of Columbia Falls. The project proposes adding approximately 24.5 miles of trail to the system to create loop opportunities near the community of Columbia Falls.

The proposed trail system would create nonmotorized trails that enhance recreation experiences and are designed for safety, environmental protection, and operational efficiency. Trails would be located, designed, constructed, and maintained to minimize the risk of user group conflict and human-wildlife conflict. Trail classes determine design elements including tread width, signing, and the recreational environment and experience. Some trail segments could be constructed on top of temporary roadways or areas already exhibiting use, and other trail segments could have new construction.

¹ Acres of live birch cutting along open roads overlap with acres of cutting units.

Two trails, TR03 and TR11A, are proposed to provide a family-friendly trail experience. TR03 could be a class 4 or 5 accessible loop for hikers and bikers close to Columbia Falls. TR11A is proposed as a pedestrian interpretive trail focusing on wetlands and aquatic ecosystems.

The proposed trail system also includes the addition of approximately 0.2 miles of class 3 all-terrain vehicle trail (6400B). This short connector trail would provide a sustainable route for motorized users to access NFS Road 1690 from NFS Trail 6400 and the existing motorized trail system.

Trails would be designed according to one designed use, or trail class, but can be managed for multiple uses. As displayed in table 2 a trail designed for mountain bike use may be managed for pedestrians and bicycles, and a trail designed for pack and saddle could be used by pedestrians, bicycles, and equestrians.

Two trailheads are proposed. One trailhead is proposed at the junction of Barnett Road and NFS Road 10815, where there is an existing clearing, and on NFS Road 1690 (see map 2). Pullouts may be constructed along open roads to allow for two to three cars to park at various points in the trail network.

Table 2. Trails proposal

Trail number	Designed use and trail class	Managed use	Miles
6400B	ATV - 3	Pedestrians, bicycles, equestrian, ATV	0.2
TR01	Bicycle - 3	Pedestrians, bicycles	3.5
TR02	Pack and saddle - 3	Pedestrians, bicycles, equestrian	2.3
TR02A	Pack and saddle - 3	Pedestrians, bicycles, equestrian	0.1
TR03	Bicycle- 4-5	Pedestrians, bicycles	1.5
TR03A	Bicycle - 3	Pedestrians, bicycles	0.5
TR04	Pack and saddle - 3	Pedestrians, bicycles, equestrian	1.4
TR05	Pack and saddle - 3	Pedestrians, bicycles, equestrian	1.7
TR06	Pack and saddle - 3	Pedestrians, bicycles, equestrian	0.9
TR07	Pack and saddle - 2	Pedestrians, bicycles, equestrian	6.4
TR08	Pack and saddle - 2	Pedestrians, bicycles, equestrian	3.2
TR08A	Pack and saddle - 3	Pedestrians, bicycles, equestrian	0.5
TR10	Pack and saddle - 3	Pedestrians, bicycles, equestrian	1.3
TR11	Pack and saddle - 3	Pedestrians, bicycles, equestrian	0.9
TR11A	Hiker only - 3	Pedestrian	0.1
Total miles			24.5

Proposed Vegetation Treatments

In order to reduce tree densities and fuel loadings within the WUI; improve the diversity and resilience of forest vegetation communities and associated wildlife habitat; and provide a mix of forest products to contribute to economic sustainability of local economies, several different silvicultural prescriptions are proposed:

Commercial thinning would retain the healthiest trees with large, well-formed crowns. The objective of this treatment is to improve forest growth and health. Leave tree selection would favor fire-tolerant species, including western larch, western white pine, and Douglas-fir. These trees would then have more growing space, light, nutrients, and water to allow them to develop into large trees more rapidly with improved insect, disease, and fire tolerance. Commercially thinned stands would not require reforestation. Three commercial thin units were identified as opportunities to feature aspen by removing encroaching

conifers from healthy aspen clones. Commercial thinning will also achieve fuels reduction objectives by reducing tree densities and ladder fuels.

Shelterwood, seed tree, and clearcut are regeneration treatments that use timber harvesting to create a new forest stand of fire-tolerant tree species. These silvicultural methods would change the stands from large and medium tree structure classes to the seedling stage. The objective of these treatments is to reduce fuels and regenerate fire-tolerant species including western larch, western white pine, or ponderosa pine. These treatments would mimic a stand replacement fire where more than 75 percent of the overstory would be replaced reducing the potential for future crown fires. All regeneration harvests would have natural regeneration, or planting of desired species, or both.

Overstory removal is a release treatment made in a stand not past the sapling stage in order to release the favored trees from competition of older, overtopping trees. The removal of the upper canopy layer would be followed by a sapling thin to improve current and future stand health, growth, species composition, and tree sizes.

Sapling thin is similar to the commercial thin except it occurs in young stands less than 35 years old where trees are small. A portion of the existing trees are removed (trees at least 6 inches or smaller diameter at breast height), leaving a relatively well-stocked forested condition. The primary objective is to maintain or improve current and future stand health, growth, and species composition. Sapling thin will also achieve fuels reduction objectives.

Understory removal is similar to the commercial and sapling thin except the primary objective is fuels reduction. A portion of the existing trees are removed (trees at least 6 inches or smaller diameter at breast height), leaving a relatively well-stocked forested condition. Ladder fuels will be reduced and spacing between trees will be increased. Understory removal will also achieve increased forest growth objectives.

Table 3 describes the tree retention for each type of vegetation treatment.

Table 3. Retention descriptions for vegetation treatments

Vegetation treatment type	Retention description	
	Trees per acre	Canopy cover
Commercial thin	80–150 medium trees per acre	30-70% (average 50%)
Shelterwood	25–35 medium to large trees per acre	20-30%
Seed tree	5–15 medium to large trees per acre	5-10%
Clearcut	5–10 medium to large trees per acre	3-7%
Overstory Removal	100–200 small trees per acre	30-50%
Sapling Thin	150–250 small trees per acre	30-50%
Understory Removal	80–150 medium to large trees per acre	30-70% (average 50%)

Live birch cutting is proposed along NFS Road 1690, 10815, and 10816 up to 150 feet from the roadway to provide opportunities for the public to harvest live birch for personal use with a permit.

Prescribed burning would return fire to the project area and reduce the risk and impacts of a relatively large stand replacement fire in the future. Using prescribed fire combined with the other proposed treatments would reduce and break up the continuity of fuels across the project area. Another objective of burning is improving wildlife forage and winter range through stimulation of browse. Implementation of

the prescribed burns could extend for several years into the future depending on the occurrences of desirable prescribed burning weather opportunities.

Treatment Methods

Commercial Harvest Methods

Methods of tree removal for units with commercial products would be ground-based mechanized or skyline. Mechanized harvest methods would occur across approximately 2,443 acres, utilizing tracked or rubber-tired equipment. Skyline harvest methods would be used on about 185 acres of steeper ground, utilizing cables to yard woody material up to a landing at the top of a unit. Thinning in the young sapling units with no commercial products would occur by hand (chainsaws) across approximately 535 acres. Fuels reduction in the understory removal units would occur by hand on 280 acres.

Post-Harvest Fuels and Site Preparation Methods

All proposed harvest units would have post-harvest treatments designed to reduce forest fuels that are generated either through harvest activity or is naturally occurring in high amounts. In the case of all regeneration harvest units (seed tree, shelterwood, and clearcut) these post-harvest activities would also prepare the site for reforestation by reducing competing vegetation and creating favorable seed bed conditions. Hand methods would include lopping and scattering of the slash/fuels or hand piling. Mechanical treatments may include one or a combination of the following: whole tree yarding (or possibly yarding of tops alone), excavator piling, or chipping/mastication of fuels across the unit. Fuel accumulations at log landings will be addressed through pile burning, chipping/masticating, or removal. Prescribed fire treatments within harvest units to reduce forest fuels could include broadcast burning, pile burning, or jackpot burning.

Reforestation Methods

Where regeneration harvest treatments are proposed (seed tree, shelterwood, and clearcut), a combination of natural and planting reforestation is planned. Planting would occur where insufficient natural regeneration of desired species is anticipated, due to lack of seed source or where restoring ponderosa pine or rust-resistant western white pine is an objective. Western white pine is an important, but declining species in this area and it would be planted wherever feasible. In addition to western white pine, other species that might be planted include western larch, Douglas-fir, and ponderosa pine.

Road Management

To improve public safety and provide access for resource management and fire suppression activities, approximately 0.9 miles of system road are proposed for construction and 0.2 miles of system road would be rerouted on NFS lands. Approximately 6.3 miles of temporary roads would be constructed to the minimum standards necessary for log hauling on NFS roads. Temporary roads would be rehabilitated following timber harvest activities and would cease to function as roads. Approximately 0.5 miles of temporary roads are proposed on existing motorized trails and will be managed again as trail following project activities. An estimated 2.5 miles of temporary roads are proposed for conversion to nonmotorized trail after harvest use.

NFS roads used as haul routes would receive road maintenance in accordance with best management practices (BMPs) prior to use. The objectives of road maintenance would be to reduce the concentration of subsurface and surface water runoff, minimize road surface erosion, filter ditch water before entering streams, and decrease the risk of culvert failures during peak runoff events. Maintenance work could

include culvert installation, replacement of existing culverts with larger culverts, installation of drainage dips and surface water deflectors, placement of rip-rap to armor drainage structures, aggregate surface replacement, aggregate placement to reinforce wet surface areas, ditch construction and cleaning where needed, and surface blading to restore drainage efficiency of the road surface. These actions would bring the roads up to current BMP standards, better accommodate traffic, and reduce deferred maintenance.

A need for an aquatic organism passage structure has been identified on NFS Road 1690 for an unnamed fishbearing stream within the Spring Creek sub-watershed. The existing undersized culverts will be replaced with a culvert or structure large enough to accommodate a 100-year flood and provide aquatic organism passage in the stream.

Table 4 provides a listing of the proposed vegetation treatments and map 1 displays the location of these treatments in the project area.

Table 4. Proposed vegetation treatments

Unit	Acres	Prescription	Treatment method
2	190	Commercial thin	Tractor
3	12	Commercial thin	Tractor
4	220	Commercial thin	Tractor
04a	8	Commercial thin	Tractor
5	39	Commercial thin	Tractor
6	120	Commercial thin	Tractor
7	166	Commercial thin	Tractor
9	40	Seed tree	Tractor
10	16	Commercial thin	Tractor
11	18	Seed tree	Tractor
14	63	Commercial thin	Tractor
16	69	Commercial thin	Tractor
17	86	Commercial thin	Skyline
20	34	Seed tree	Tractor
23	4	Seed tree	Skyline
25	17	Seed tree	Tractor
25a	11	Seed tree	Tractor
27	56	Commercial thin	Tractor
29	7	Seed tree	Tractor
31	12	Seed tree	Tractor
32	22	Seed tree	Tractor
33	20	Seed tree	Tractor
35	5	Understory removal	Hand
36	23	Seed tree	Tractor
40	40	Commercial thin for aspen release	Tractor
42	8	Seed tree	Tractor
43	39	Commercial thin	Tractor
44	16	Seed tree	Skyline

Unit	Acres	Prescription	Treatment method
45	10	Seed tree	Tractor
46	133	Commercial thin	Tractor
46a	11	Commercial thin	Tractor
47	22	Commercial thin	Tractor
48	7	Seed tree	Tractor
49	23	Shelterwood	Tractor
50	12	Commercial thin	Tractor
51	86	Commercial thin	Tractor
53	10	Commercial thin	Tractor
54	53	Commercial thin	Tractor
54a	8	Commercial thin	Tractor
55	16	Commercial thin	Skyline
64	32	Commercial thin	Tractor
65	13	Seed tree	Tractor
66a	2	Understory removal	Hand
67	18	Commercial thin	Tractor
68	36	Commercial thin for aspen release	Tractor
70	33	Seed tree	Tractor
70a	9	Seed tree	Tractor
71	34	Commercial thin	Tractor
72	5	Seed tree	Tractor
73	27	Seed tree	Tractor
74	3	Seed tree	Tractor
81	3	Seed tree	Tractor
82	20	Commercial thin	Tractor
82a	12	Commercial thin	Tractor
85	39	Commercial thin	Tractor
86	41	Seed tree	Tractor
88	12	Seed tree	Tractor
92	4	Seed tree	Tractor
93	26	Seed tree	Skyline
96	12	Commercial thin	Tractor
96a	2	Commercial thin	Tractor
98	3	Seed tree	Tractor
99	4	Seed tree	Tractor
101	10	Seed tree	Tractor
102	7	Seed tree	Tractor
108	9	Shelterwood	Skyline
109	39	Commercial thin	Tractor
112	14	Commercial thin for aspen release	Tractor

Unit	Acres	Prescription	Treatment method
113	20	Commercial thin	Skyline
114	9	Commercial thin	Skyline
119	19	Commercial thin	Tractor
119a	6	Commercial thin	Tractor
120	10	Seed tree	Tractor
121	13	Clearcut	Tractor
122	35	Commercial thin for aspen release	Tractor
123	77	Commercial thin	Tractor
126	15	Commercial thin	Tractor
127	36	Commercial thin	Tractor
128	12	Commercial thin	Tractor
129	54	Commercial thin	Tractor
130	6	Commercial thin	Tractor
131	55	Seed tree	Tractor
133	24	Understory removal	Hand
133a	3	Understory removal	Hand
134	30	Understory removal	Hand
135	46	Understory removal	Hand
136	26	Understory removal	Hand
137	42	Understory removal	Hand
140	5	Understory removal	Hand
141	24	Understory removal	Hand
142	15	Understory removal	Hand
143	45	Understory removal	Hand
144	14	Understory removal	Hand
200	4	Sapling thin	Hand
201	21	Sapling thin	Hand
202	10	Sapling thin	Hand
203	6	Sapling thin	Hand
204	14	Sapling thin	Hand
205	24	Sapling thin	Hand
206	16	Sapling thin	Hand
208	39	Sapling thin	Hand
209	2	Sapling thin	Hand
210	8	Sapling thin	Hand
211	4	Sapling thin	Hand
212	13	Sapling thin	Hand
213	27	Sapling thin	Hand
214	7	Sapling thin	Hand
215	2	Sapling thin	Hand

Unit	Acres	Prescription	Treatment method
217	9	Sapling thin	Hand
220	10	Sapling thin	Hand
222	15	Sapling thin	Hand
223	8	Sapling thin	Hand
224	13	Sapling thin	Hand
226	3	Sapling thin	Hand
227	6	Sapling thin	Hand
228	5	Sapling thin	Hand
229	6	Sapling thin	Hand
230	10	Sapling thin	Hand
231	10	Sapling thin	Hand
232	19	Sapling thin	Hand
233	5	Sapling thin	Hand
234	5	Sapling thin	Hand
235	37	Sapling thin	Hand
236	49	Sapling thin	Hand
237	46	Overstory removal with sapling thin	Tractor
238	23	Sapling thin	Hand
239	20	Sapling thin	Hand
240	22	Sapling thin	Hand
241	17	Sapling thin	Hand
242	17	Sapling thin	Hand
243	27	Sapling thin	Hand
300	48	Prescribed burn	-
300a	59	Prescribed burn	-
301	50	Prescribed burn	-
NFS Road 10815	105	Personal use live birch cutting	Hand
NFS Road 10816	32	Personal use live birch cutting	Hand
NFS Road1690	140	Personal use live birch cutting	Hand